REU Presentation:

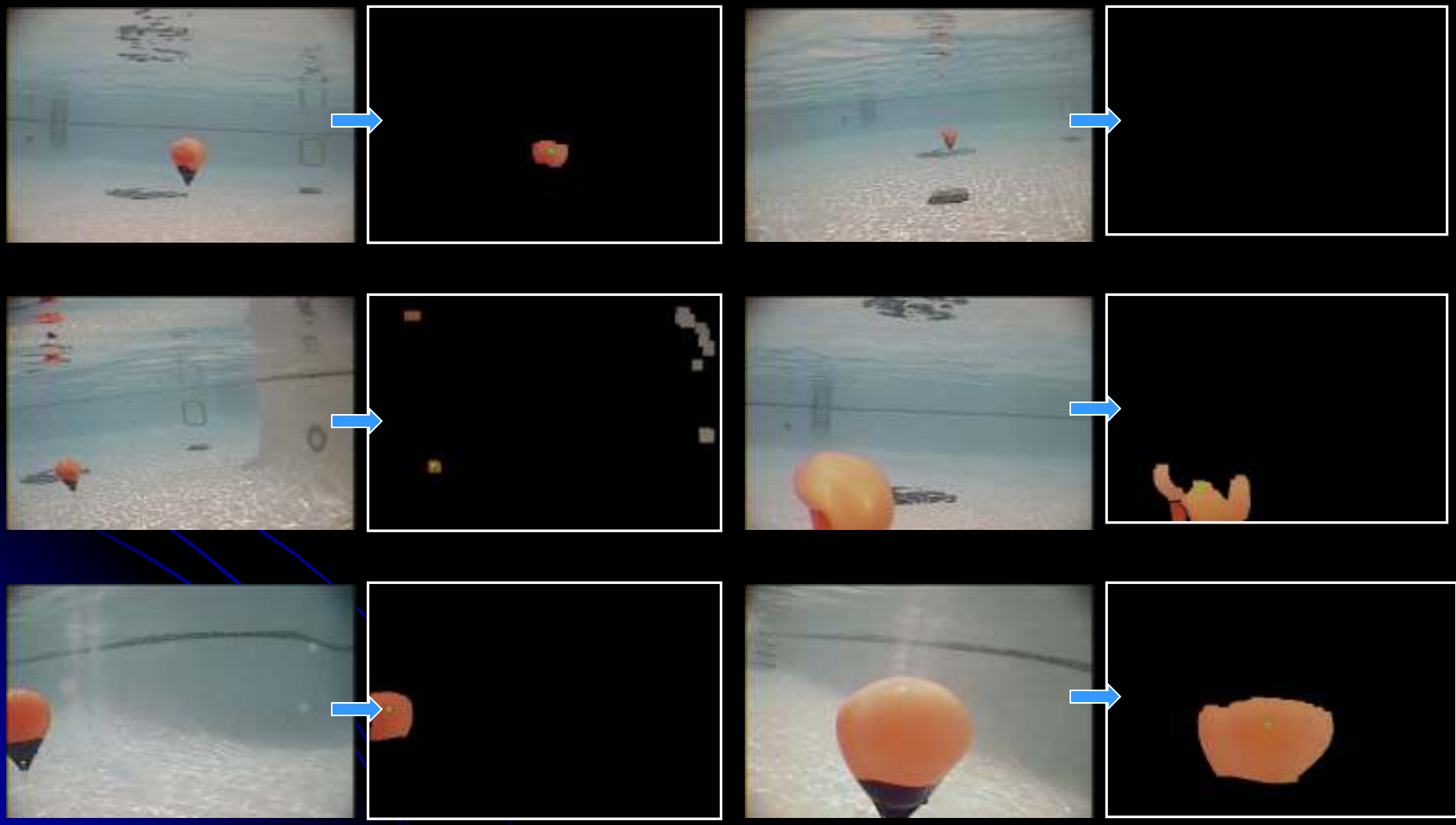
Week 5

Jacqueline Nelson

This Week's Progress

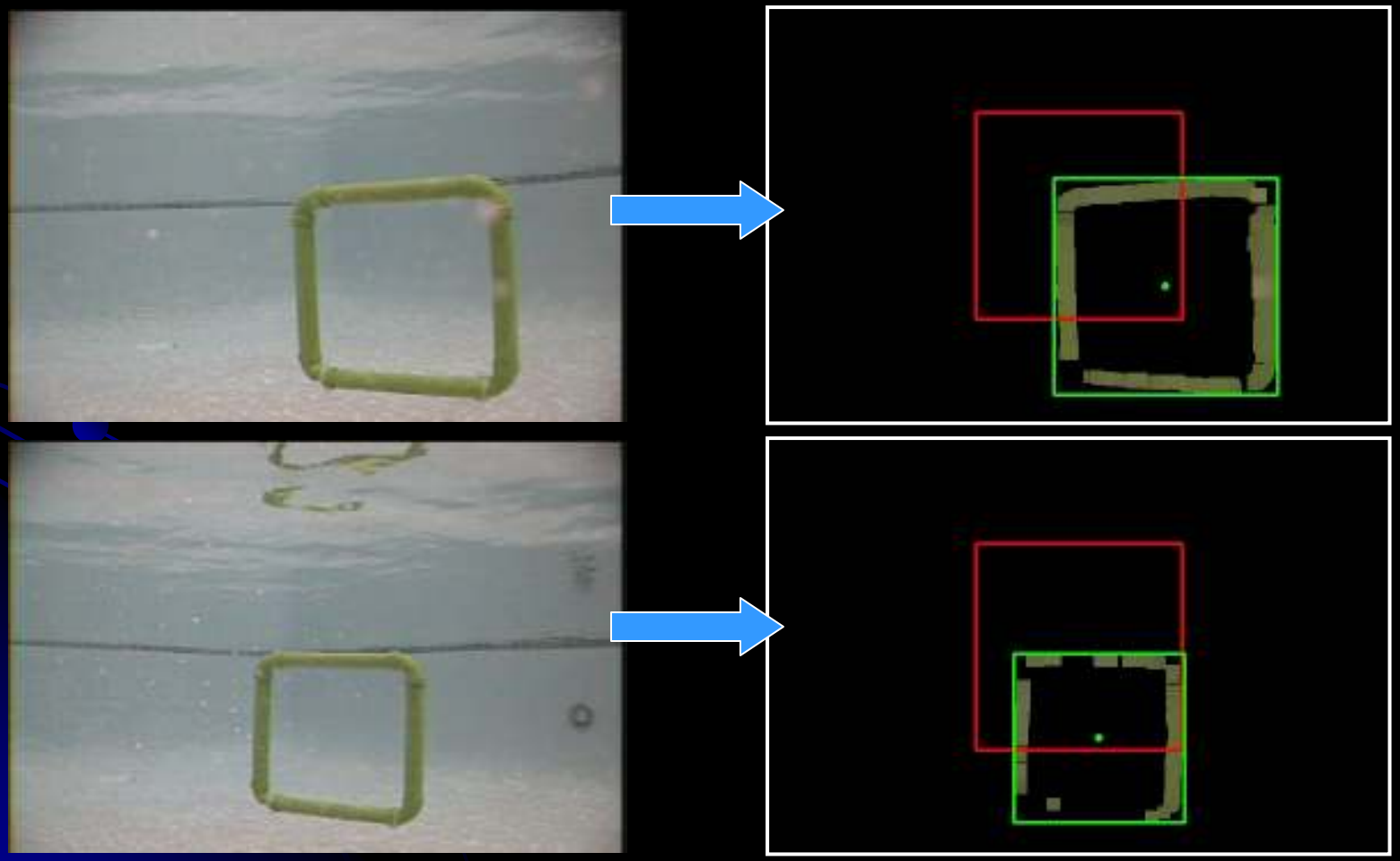
- Over 9000 images collected Sunday.
- Reworked code for locating flare.
- Began code for locating:
  - Machine Gun Nest
  - Barbed Wire
  - Briefcase
  - Pipeline

“Flare”

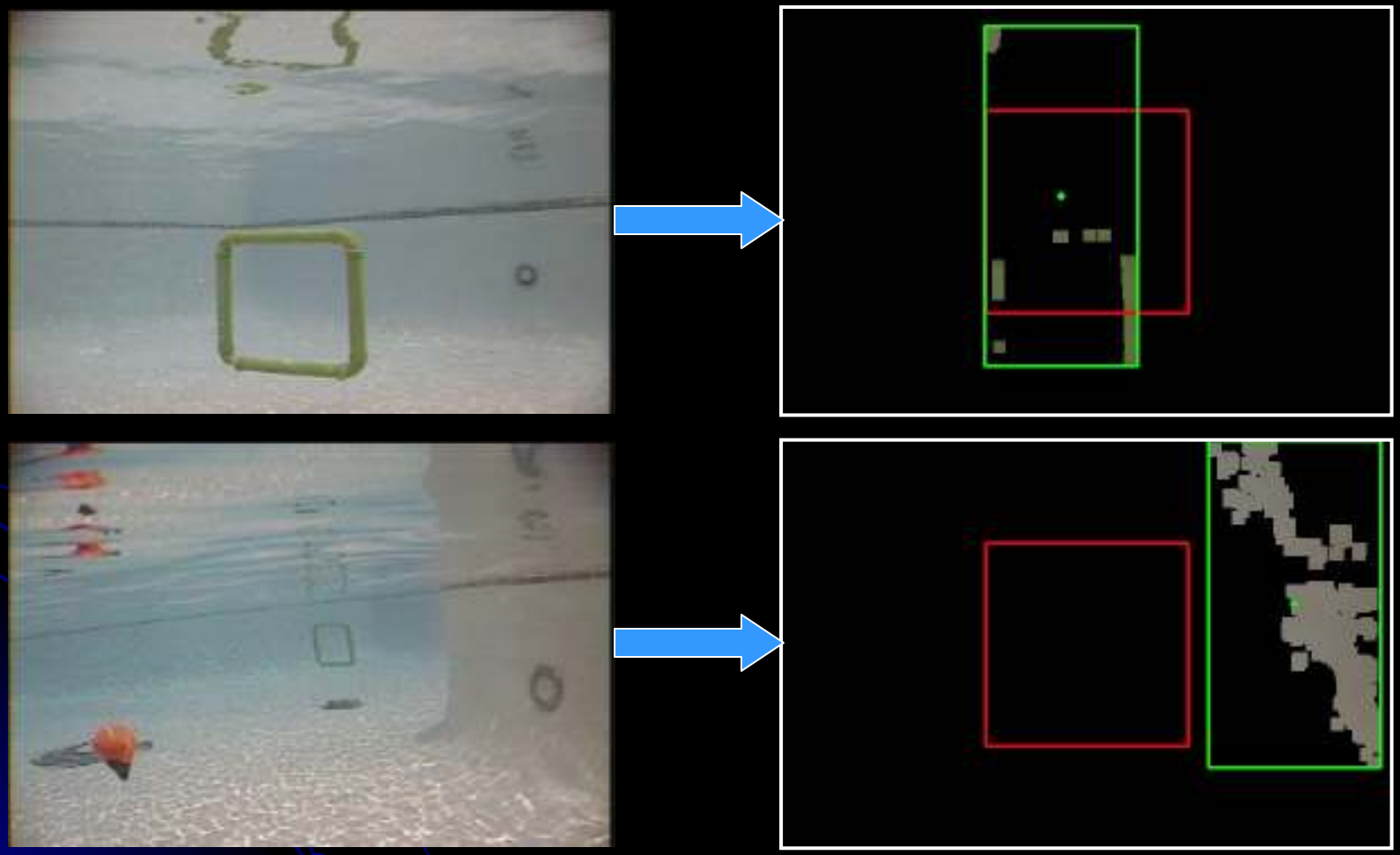


“Machine Gun Nest”

- This tasks consists of a 2” (5.08 cm) diameter PVC pipe arranged into a 18” (46 cm) square (center of pipe to center of pipe) painted **GREEN**.
- The objective is to locate the square, and fire a projectile through it.

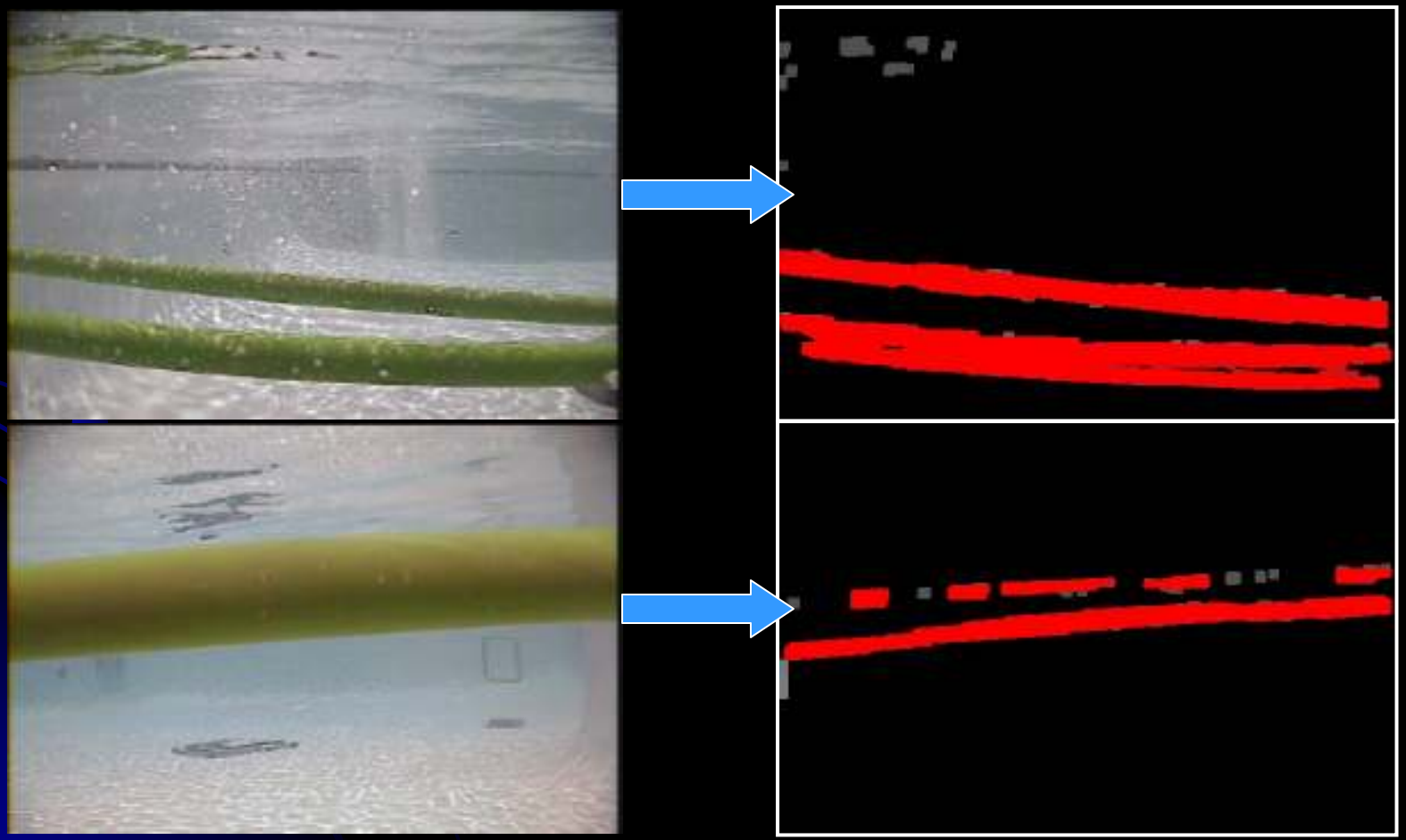


Problems

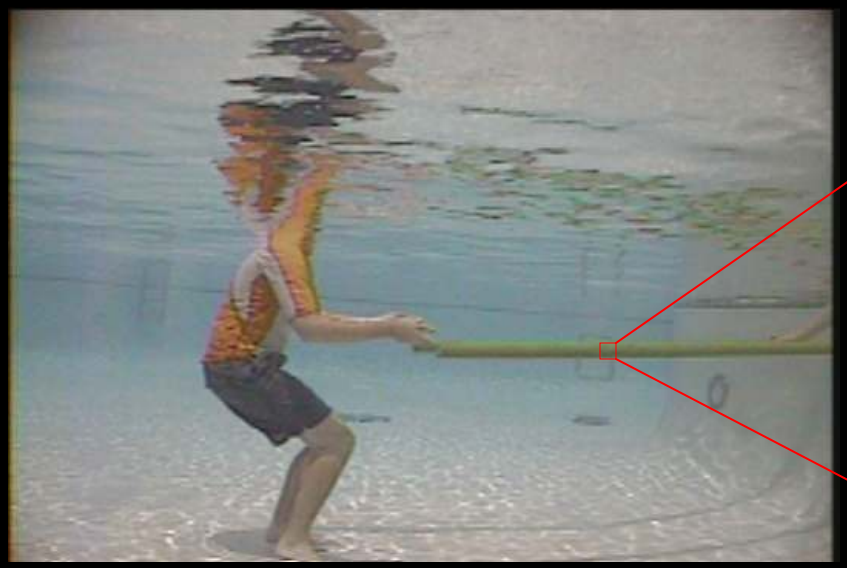


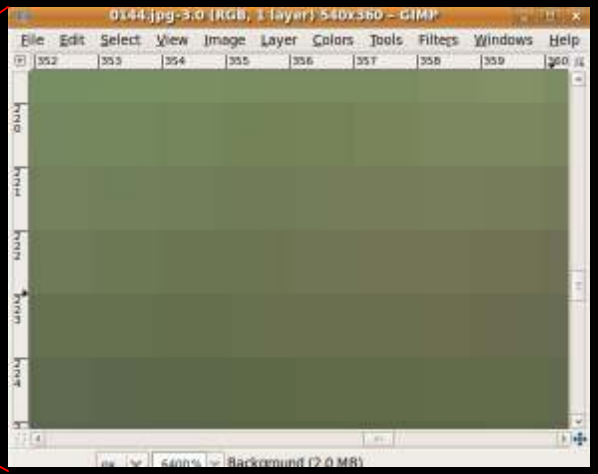
“Barbed Wire”

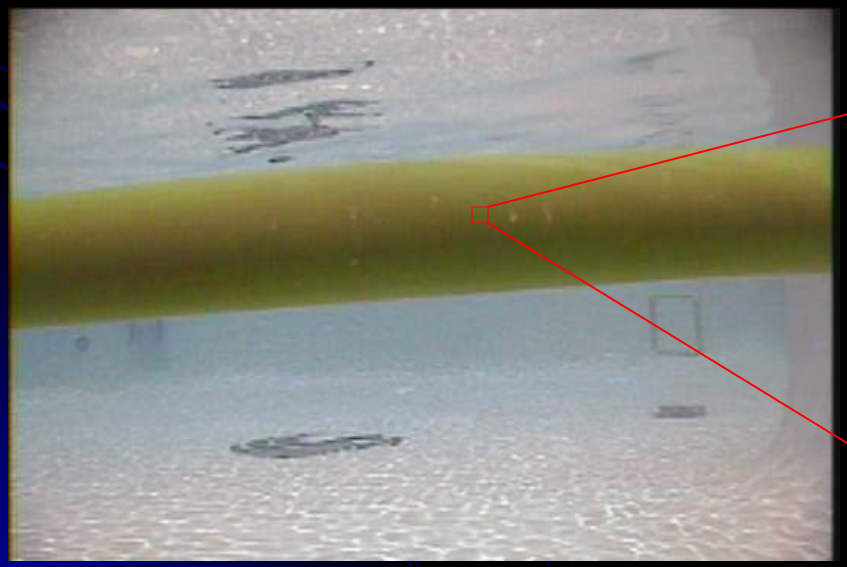
- The task consists of two 2” (5.08 cm) diameter, 6ft (1.8 m) long PVC pipe painted **GREEN** and suspended 7-8 ft (2.1 – 2.4 m) above the floor. The two PVC pipes will be parallel and separated by a distance of 4-4.5 ft (1.2-1.4 m).
- The objective is to pass underneath the two parallel pipes.



Problems



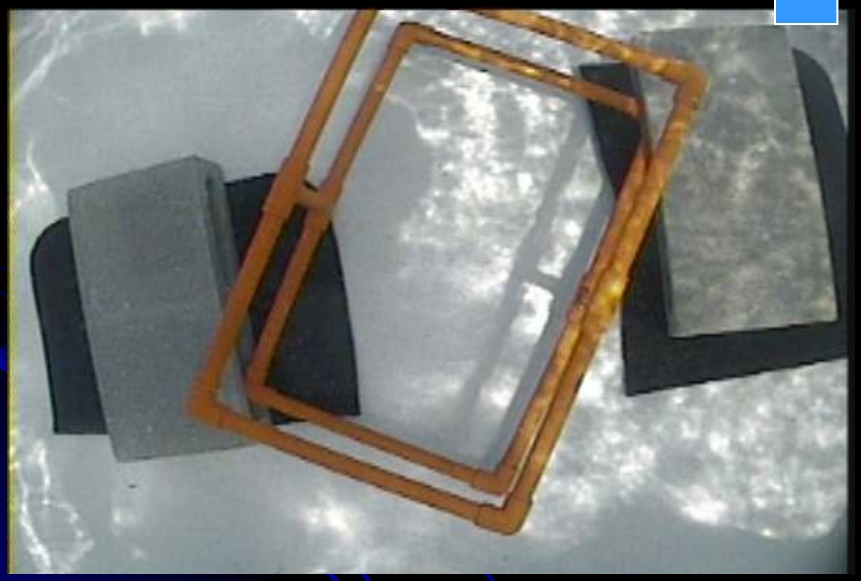

0144.jpg-3.0 (RGB, 1 layer) 540x360 – GIMP
File Edit Select View Image Layer Colors Tools Filters Windows Help
Background (2.0 MB)

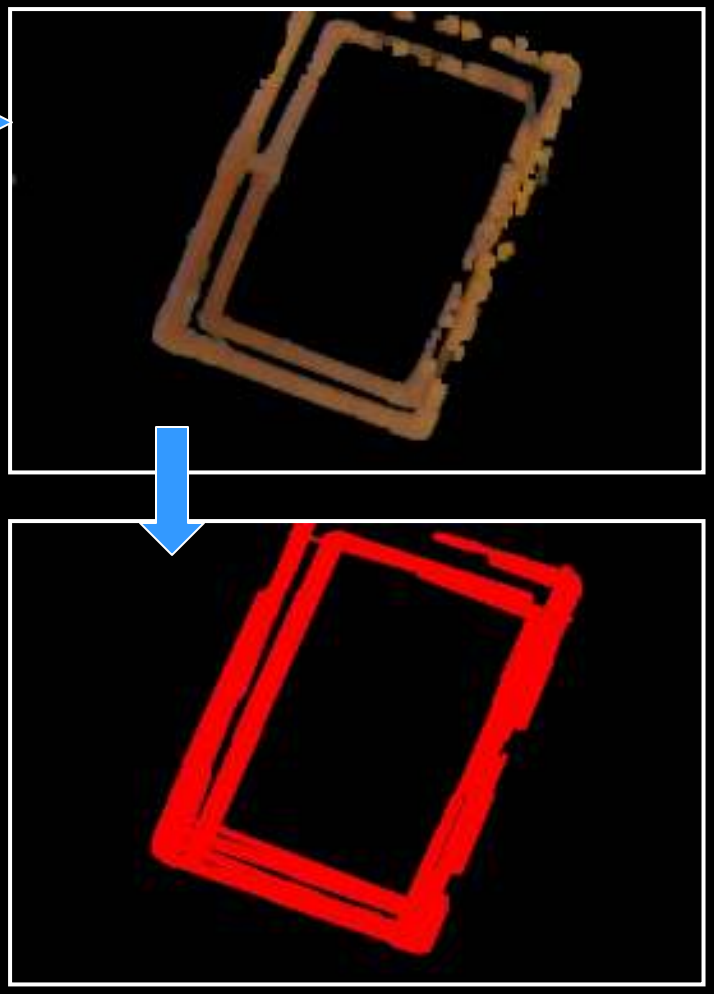



0886.jpg-2.0 (RGB, 1 layer) 540x360 – GIMP
File Edit Select View Image Layer Colors Tools Filters Windows Help
Background (2.0 MB)

“Briefcase”

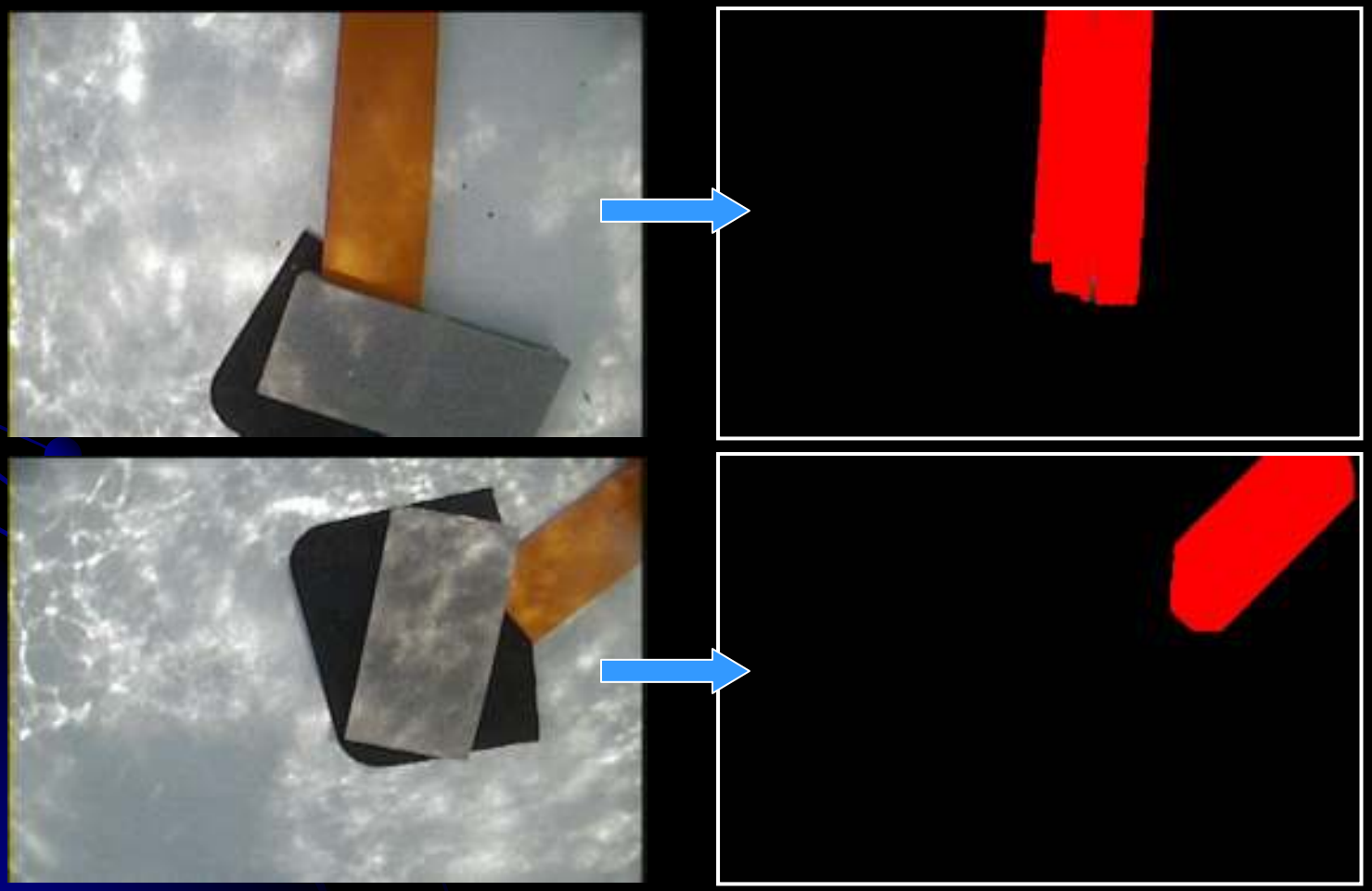
- Positioned directly above each pinger will be a fixture which holds a PVC “Briefcase”. The “Briefcase” will be painted **ORANGE** similar to the “Path”.
- The objective is to retrieve the “Briefcase” and bring it to the surface.



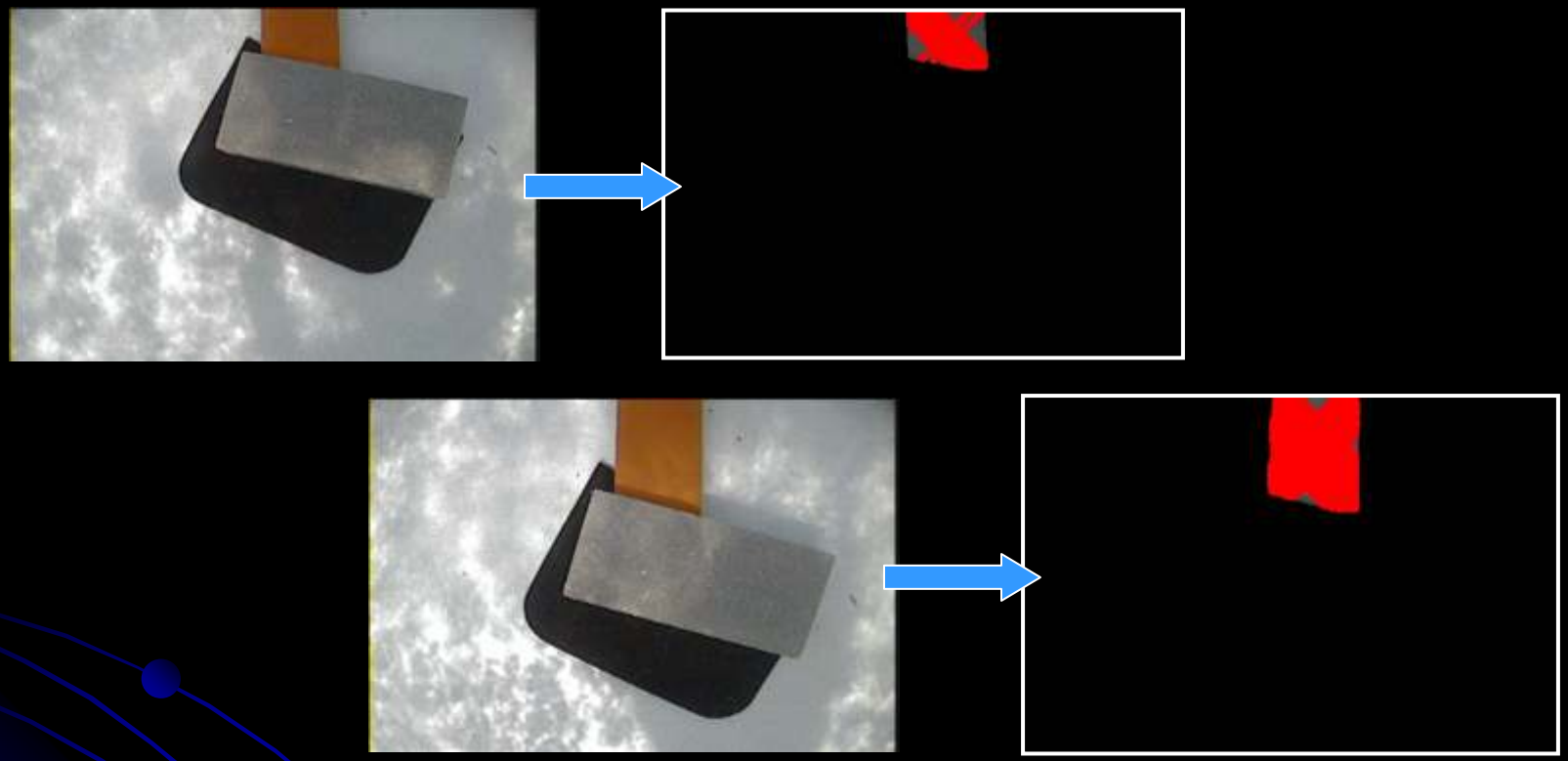


“Pipeline”

- This task consists of line segments constructed from 6 inch flat PVC sheet snaking its way from the Gate to the Flare, to the Bombing run and Machine gun nest, and finally to the Briefcase area. It will be painted **ORANGE**.



Oddities



- This should not be a problem after all the lines are averaged to generate a single line that the sub can follow.

What's Next

- Average the lines generated in pipeline code.
- Research and implement "box-fitting" capabilities of OpenCV for machine gun nest and briefcase.
- Determine a better method for recognizing the green objects.
- Implement SURF in Bombing Run mission.